

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 20-24 are currently pending, Claims 20-24 having been added, and Claims 1-19 having been canceled without prejudice or disclaimer. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, on original Claims 1, 3-6, and 13-14; and Figs. 17, 18, and 21.

In the outstanding Office Action, Claims 1-10 and 12-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Wang et al. (U.S. Pub. No. 2004/0128128, hereafter “Wang”) in view of Ofek (U.S. Patent No. 6,038,230); and Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Wang in view of Ofek and Jalali et al. (U.S. Pub. No. 2003/0002450, hereafter “Jalali”).

With respect to the rejections of Claims 1-19 under 35 U.S.C. §103(a), Applicants respectfully submit that the cancellation of Claims 1-19 and the addition of new Claims 20-24 overcome these grounds of rejection.

New Claim 20 recites, *inter alia*,

in the transmitting unit:...

said containing step further includes containing a delay amount control information indicating a difference of frame numbers in the same packet that contains the frame acoustic signal;

the acoustic signal corresponding data is a data for a frame having a frame number different by a value indicated by the delay amount control information; and...

in the receiving unit:

a determination step of determining at least one of a jitter state of a received packet and a loss state of a received packet; and

a step of using the result of the determination made in the determination step to determine, as a targeted value of the number of stored packets, the number of packets to be stored in the receiving buffer; and

in the transmitting unit:

a step of setting the delay amount control information to a value smaller than or equal to the targeted value of the number of stored packets which is determined at the receiving unit.

A non-limiting example of the features of Claim 20 are shown in Applicants' Fig. 17 (transmitting unit) and Fig. 20 (receiving unit). In Claim 20, the number of packets to be stored in the receiving buffer is determined as a targeted value of the number of stored packets based on at least one of a jitter state of a received packet and a loss state of a received packet; the delay amount control information is set to a value smaller than or equal to the targeted value of the number of stored packets; and frame acoustic signal, acoustic signal corresponding data and delay amount control information are contained in the same packet; where the acoustic signal corresponding data is a data for a frame of a frame number different by a value indicated by the delay amount control information.

In the non-limiting example, the acoustic signal corresponding data of the current frame is not contained in the packet of the current frame but contains an acoustic signal corresponding data of a frame number different by the value indicated by the delay amount control information. This means that the acoustic signal corresponding data of the current frame would be contained in a packet of difference frame, and, therefore, even when the receiving unit of another communication apparatus fails to receive the packet of current frame, an acoustic signal can be reproduced using the acoustic signal corresponding data contained in a different packet whose frame number would be different from the current frame number by a value indicated by the delay amount control information.

Thus, the invention defined by new Claim 20 provides the advantage that by controlling the number of packet to be stored in the receiving buffer based on the jitter state and/or loss state of a received packet, signal delay can be minimized while packet loss of current frame can be concealed by using an acoustic signal corresponding data in a different frame.

Applicants submit that the above-noted features of Claim 20, as a whole, are not shown in the previously applied references.

In particular, as previously presented, Wang is directed to a device for compressed-domain packet loss concealment. Specifically, Wang relates to error concealment, where each frame of AAC (Advanced Audio Coding) is composed of a critical data part (header), scale factors part and QMDCT data part which are separately stored in three buffers 32, 34, 36 of a receiver, respectively, so that when one or more of the three data parts of a current frame are defective, defective data part in the current frame are recovered using corresponding data part of at least one neighboring frame in the buffers (see paragraphs [0012] and [0013]). For this purpose, in Wang, data parts of a current frame are stored in at least one neighboring frame (see para [0010]).

The Office Action had previously acknowledged that Wang fails to explicitly disclose or suggest “in the transmitting unit, including, in the same packet that contains a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames,” (see Office Action, at page 5) and “a step of setting the delay amount control information to a value smaller than or equal to the targeted value of the number of stored packets” (see Office Action, at page 7).

The Office Action had cited to Ofek to remedy these deficiencies of Wang. In particular, the Office Action cites to Fig. 15, col. 14, lines 25-29, col. 14, lines 36-58, col. 16, lines 56-63, and col. 18, lines 54-60. Col. 14, lines 25-29 describe a local clock. Col. 14,

lines 36-58 describes time frame delimiter (TFD) which marks a boundary between two success frames. Col. 16, lines 56-63 describe performing mapping to determine the respective time frame a respective packet should be forwarded out of an output port. Col. 18, lines 54-60 describe a claimed delay analysis controller which determines the difference between predefined time frames based on a comparison with a maximum defined delay. However, none of these cited portions of Ofek describe setting “delay amount control information,” which is information about a difference in frame numbers that is contained in the same packet that contains the frame acoustic signal, based a “targeted value” of the number of stored packets which is determined based on either a jitter state or a loss state of a received packet.

Jalali has also been considered but fails to remedy the above-noted deficiencies of Wang and Ofek with regard to new Claim 20.

Therefore, Applicants respectfully submit that new Claim 20 (and dependent Claim 24) patentably distinguishes over Wang, Ofek, and Jalali, either alone or in proper combination.

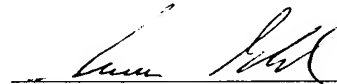
New independent Claims 21, 22, and 23 recite features similar to those of Claim 20 discussed above with the following noted exceptions. In Claim 20, in the transmitting unit, the delay amount control information is set to equal to or smaller than the targeted value determined at the receiving unit in the same communication apparatus that includes the transmitting unit. Whereas, Claim 21 includes similar features mentioned above, but the setting of delay amount control information is performed in the transmitting unit using the targeted. Claim 22 differs from Claim 21 in that a remaining buffer amount is recited instead of the targeted value. Claim 23 is directed to a communication apparatus with similar features as Claim 20.

Applicants submit that new Claims 21-23 patentably distinguish over Wang, Ofek, and Jalali, either alone or in proper combination, for similar reasons as discussed above.

Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested. Furthermore, the examiner is kindly invited to contact the Applicants' undersigned representative at the phone number below to resolve any outstanding issues.

Respectfully submitted,

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